Practitioner's Docket No. 6013-146US ***PATENT***

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Laurent Bazinet et al.		
Application No.:	10/591,238	Art Unit:	1724
Filing or 371 (c) Date:	May 14. 2007	Examiner:	Colleen M. Raphael
For:	PROCESS AND SYSTEM FOR SEPARATION OF ORGANIC CHARGED COMPOUNDS		

DECLARATION BY Dr. LAURENT BAZINET

I, Laurent Bazinet pursuant to 37 C.F.R. § 1.132, hereby declare that:

(1) I am a citizen of Canada and I am a Professor at the Department of Food Science and Nutrition, Faculty of Food Science of Université Laval, in Québec city, Canada. A copy of my *curriculum vitae* is enclosed.

(2) I am a co-inventor of United States patent application serial number 10/591,238 filed on May 14, 2007.

(3) I have read and understood the content of U.S. application serial number 10/591,238 and the Official action issued on April 12, 2011 in respect of this patent application.

(4) I understand that the Examiner examining this case is rejecting the claims as being obvious based on Jain US 4,322,275 in view of Tye US 3,046,211.

(5) I understand that the Examiner is applying Jain because he is interpreting that the neutral membrane as stated in column 6, lines 22 to 32 of this document is equivalent to a filtration membrane as is claimed in our patent application 10/591,839. With respect, I disagree with the Examiner's interpretation for the following reasons:

(6) I am familiar with the work of Jain that proceed to reach the isoelectric point of proteins by using salting-in and salting-out phenomena by electrodialysis.

(7) In this work, during electrodialysis there is precipitation of proteins through the eventual loss of their charge but there is no transfer of proteins through membranes, be them neutral membranes (which is the case here) or filtration membranes (which is <u>not</u> the case here).

(8) In the present case, the point of our invention is to preserve the protein's charge and avoid precipitation otherwise their separation by electrodialysis would fail. The neutral membrane that is referred to at column 6 of the Jain document is essentially that: a

neutral membrane. It is not because it is called a membrane that it constitutes a filtration membrane.

(9) Indeed, the filtration membrane as is currently claimed is a filtration membrane having a specific pore size with a specific molecular weight cut off (MWCO).

(10) The essentially electrically neutral membrane as stated in Jain does not permit the migration of peptidic molecules and does not have pores and is therefore "non-porous". Such neutral membrane is sometimes called «porous» inasmuch as it is «loose» or rather not totally water-tight, but it does not allow the migration of peptides or proteins.

(11) In the Jain Application (i.e. the simplest form of electrodialysis), the membranes are used as physical barriers, preventing the mixing of electrolytic products, but they to not exert any selective action with regard to ion migration and they do not exert any selective action with regard to specific size of molecules or peptides.

(12) The separation disclosed by Jain is carried out by coupled electrodialysis with a chemical pH adjustment to reach the isoelectric point of the proteins, without further adjustment to maintain that pH, and consequently to precipitate them. The resulting uncharged proteins can not migrate under the influence of an electric field, whereas salts can, therefore changing the pH of the solution.

(13) Applying the technique of Jain would defeat our purpose since our purpose is to induce a charge in the organic molecule to be separated and apply a pH control in order to retain that charge throughout the entire process to avoid precipitation of the proteins and ensure migration throughout. I enclose herewith a review article of Critical Reviews of Food Science and Nutrition 45307 – 326 2005 supporting my arguments.

(14) In addition, I believe that the use of a filtration membrane within an electrodialysis cell is surprising since it was well recognized by scientists in the field that a filtration membrane would be too electrically-resistant to allow the passing of the charged molecules to be separated.

I hereby declare that all statements made herein of my own knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that any such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature: _____ Date: 06/07/2011

Laurent Bazinet, Ph.D.